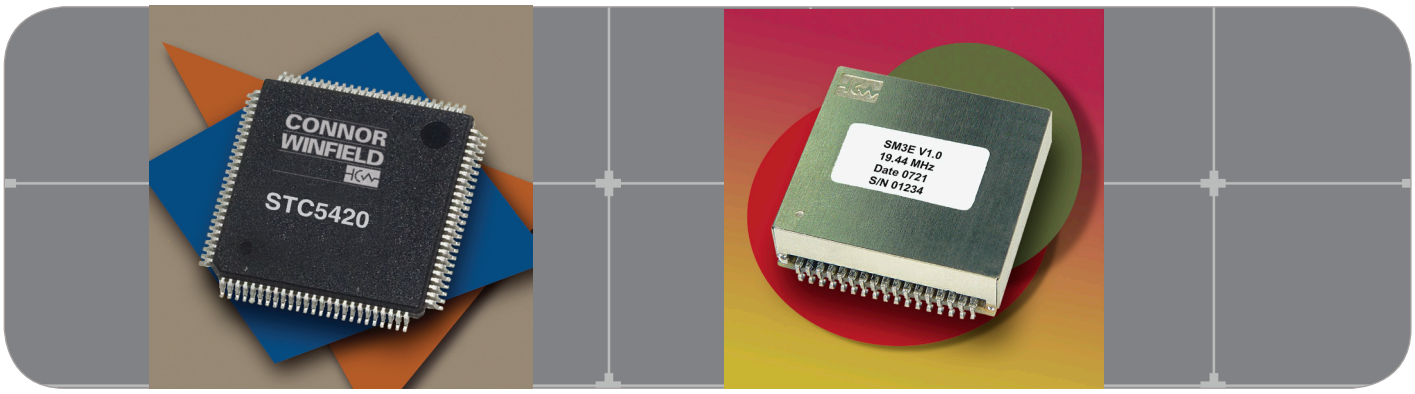
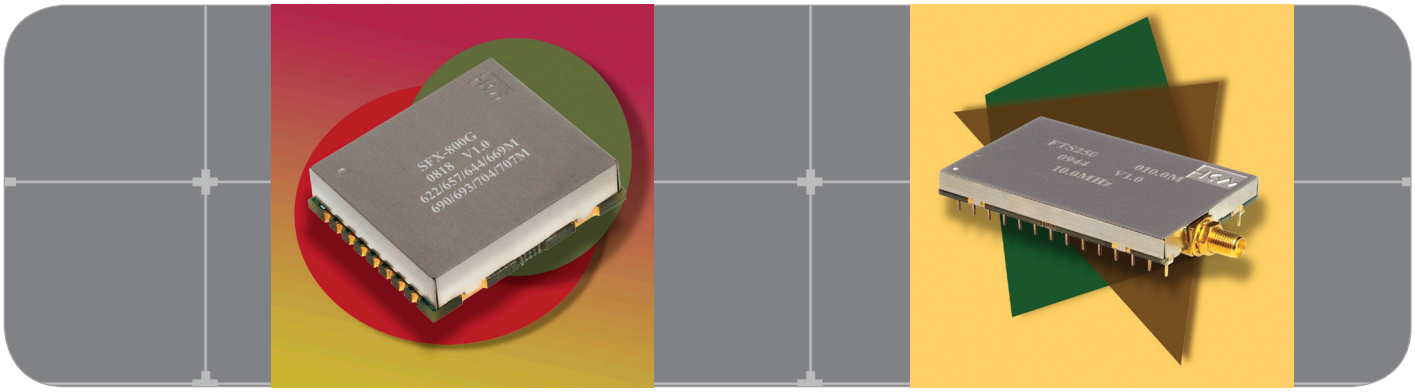
TIMING SOLUTIONS
PRODUCT GUIDE

THE CONNOR-WINFIELD CORPORATION





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CONNOR WINFIELD

Global Timing Solutions for Over 45 Years

CONNOR WINFIELD

At Connor-Winfield we take exceptional pride in providing solutions to your frequency control design requirements. Our ongoing goal is to always supply you with the right solution for *your* product.

With this ever-prevailing philosophy, we will work with your design team to assure complete compatibility with your final product design — even if that product does not currently exist. By participating at the front end of your design cycle, we will recommend the exact product you need…or co-develop to match your exact and precise design requirements.

This Timing Product Guide is intended to as an overview of the full line of Connor-Winfield timing products. Please visit our website for a more comprehensive look at our product offering.

www.conwin.com

Network Timing Products

Since 1963, Connor-Winfield has been a leader serving the OEM oscillator and crystal marketplace. Total timing system design is the natural evolution of Connor-Winfield's experience and expertise. Incorporating proven crystal, VCXO, TCXO and OCXO technologies, we provide complete subsystems for network timing, frequency regeneration and timing signal generation. Choosing Connor-Winfield timing subsystems eliminates the need for dedicated timing expertise and the need to engineer and test individual filters, clocks and control functions; dramatically reducing design time and accelerating time to market. You get a system level solution, complete and ready to perform within the precise parameters of network timing requirements and your system communications/control specifications. All Connor-Winfield network timing products are designed to meet and exceed Telcordia/ITU standards including GR-1244 and GR-253, as well as G.812 and G.813 specifications.

GPS Network Timing Products

GPS Disciplined Oscillators (GPSDOs) are designed specifically for precision timing and synchronization of wireless networks. Wireless systems need precise timing to optimize use of their assigned radio spectrums across extensive geographic areas. Connor-Winfield's GPS models combine a GPS receiver with high-quality oscillators, for integrated low-cost GPS timing modules.

Connor-Winfield, a pioneer in timing and synchronization products, continues to provide advanced technology to meet the shifting needs of the wireless market. Our products have a strong history of reliability in applications from CDMA base stations to paging towers to e-commerce.
In the ever-evolving wireless world, Connor-Winfield's timing and synchronization solutions stand apart in offering unsurpassed, reliable and quality performance. You can depend on Connor-Winfield to continue to lead the way for your GPS timing needs.

Reference Design

After a discussion to understand the architecture of your network element, Connor-Winfield engineers can recommend a timing solution that exactly matches your requirements. The reference design will then include an ASIC and Connor-Winfield software, along with a functional block diagram and recommendations for external components. This allows the OEM to lay the design out on their board and manage all aspects of the material supply of the components.

All Connor-Winfield network timing products meet Telcordia/ITU standards including GR-1244 and GR-253, as well as G.812 and G.813 specifications.

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S O L U T I O N S

Stratum 3 Timing ICs

Sync Card Solutions

Line Cards Solutions

Clock Distribution Solutions

Connor-Winfield's Timing ICs are single chip solutions for timing solutions and line card operations in SDH, SONET, and Synchronous Ethernet applications. All ICs have freerun, holdover and reference switching capabilities.

Control monitoring is done through an SPI bus. STC52 and 54 series & STC3500 conform to GR-1244-CORE, GR-253-CORE, G.812 (Type IV), G.8262 (Option 1 & 2) and G.813 (Option 1 & 2). STC3800 conforms to GR-1244-CORE, GR-253-CORE, G.812 (Type III & V), and G.812 (Type VI) These modules address all reference monitoring, selection, filtering, synthesis and control.

STC5420

The STC5420 accepts 12 clock reference inputs and generates 10 synchronized clock outputs. Synchronized outputs may be programmed for a wide variety frequencies including Nx8kHz, OC-N, Ethernet frequencies and framing pulse clocks. Reference inputs are individually monitored for activity and quality.

Each timing generator includes a DSP-based PLL. Synchronized mode is in external timing while freerun, pseudo holdover and holdover mode are in self-timing. T0 supports Master/Slave operation for redundant design. T4 only supports master operation. DSP-based PLL technology removes any external part except the oscillator.

The STC5420 is clocked by a 12.8MHz external oscillator (TCXO or OCXO). A well-chosen external oscillator, such as T502-12.8M or T602-12.8MHz (Industrial temp range) from Connor Winfield, will allow you to meet all synchronization requirements

- Supports manual, fast-manual and automatic reference selection
- Outputs 10 synchronized clock outputs, including 2 frame pulse clocks
- Programmable loop bandwidth, from 0.1Hz to 100Hz
- Supports bus interface: Intel, Motorola, Multiplexed, SPI
- Single 3.3V operation
- IEEE 1149.1 JTAG boundary scan
- Available TQFP100 package
- RoHS Compliant.

STC5423

The STC5423 accepts 2 clock reference inputs and generates 9 synchronized clock outputs. Synchronized outputs may be programmed for a wide variety frequencies including Nx8kHz, OC-n,

Two independent timing generators, T0 and T4, may operate in the **Freerun, Synchronized, Pseudo Holdover** and **Holdover** mode. Each timing generator includes a DSP-based PLL. Synchronized mode is in external timing while freerun, pseudo holdover and holdover mode are in self-timing. DSP-based PLL technology removes any external part except the oscillator.

The STC5423 is clocked by a 12.8MHz external oscillator (TCXO or OCXO). A well-chosen external oscillator, such as T502-12.8M or T602-12.8MHz (Industrial temp range) from Connor Winfield, will allow you to meet all synchronization requirements.

- Supports manual, fast-manual and automatic reference selection
- Phase-align or hit-less reference locking switching
- Programmable loop bandwidth, from 0.1Hz to 100Hz
- Supports bus interface: Intel, Motorola, Multiplex, SPI
- Single 3.3V operation
- IEEE 1149.1 JTAG boundary scan
- Available in TQFP100 package

STC5425

The STC5425 accepts 5 clock reference inputs and generates 6 synchronized clock outputs. Synchronized outputs may be programmed for a wide variety frequencies including Nx8kHz, OC-n, Ethernet frequencies and frame pulse clocks.

The timing generator operates in either external-timing or self-timing. Its internal DSP-based PLL may operate in the Free-run, Synchronized, Holdover and Pseudo Holdover mode. DSP-based PLL technology removes any external part except the oscillator..

The STC5425 is clocked by a 12.8MHz external oscillator (TCXO or OCXO). A well-chosen external oscillator, such as T502-12.8M or T602-12.8MHz (Industrial temp range) from Connor Winfield, will allow you to meet all synchronization requirements.

- Support Multiple-Master redundant application
- Supports manual, fast-manual and automatic reference selection
- Programmable loop bandwidth, from 0.1Hz to 100Hz
- Single 3.3V operation
- IEEE 1149.1 JTAG boundary scan
- Available TQFP64 package
- RoHS Compliant

STC3500

The STC3500 can operate in Free Run, locked or Hold Over mode. In the Free Run mode, it locks on an OCXO or TCXO. In the locked mode, it locks on one of 8 input reference clocks. The frequency of each input reference clock can be user selected or automatically detected by the device. The active reference can be automatically selected by the device based on a priority table or manually controlled by the user. All reference switches are hit-less. In Hold Over mode, the device generates outputs based on the frequency history of the last locked reference.

- Accepts 8 reference inputs from 8 kHz to 77.76 MHz and one 8 kHz cross reference
- Continuous input reference quality monitoring
- Supports hardwire pins to select active reference
- Output phase is adjustable in slave mode
- Frequency ramp control during reference switching
- IEEE 1149.1 JTAG boundary scan
- Available in FBGA144 package

STC3800

Similiar specs to it's sister STC3500, but made for Stratum 3E.

The STC3800 supports the Master or Slave mode of operation for redundant designs. In master mode, the device operates in Free Run, locked or Hold Over. In slave mode, the output clocks are locked to the master's primary Sync_Clk or 8 kHz synchronous clock output and are phase offset adjustable.

- Input reference frequency are automatically detected
- Supports hardwire pins to select active reference
- Four output signals: one selectable up to 155.52 MHz, one fixed at 8 kHz, one multi frame sync fixed at 2 kHz, and 1.544 MHz or 2.048 MHz BITS output
- Hit-less reference switching
- Better than 1 ppb Holdover accuracy
- Configurable bandwidth filter for Stratum 3 or 3E
- Supports SPI and 8-bit parallel bus interface

Timing Modules — Sync Card

Connor-Winfield's self contained modules for sync card timing solutions are complete system clock modules for Stratum 3 and Stratum 3E timing applications. See individual units for Synchronous Ethernet requirements.

All modules have freerun, holdover, hitless reference switching, adjustable filter bandwidths, input reference qualification, LOL/LOS alarm indication and master/slave operation. Control and monitoring is done through a SPI bus or stateful pin indicators. Main output is VCXO derived and very low jitter <1 ps rms jitter (12 kHz -20 MHz).

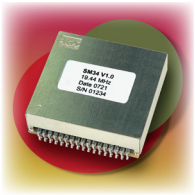
Miniature Stratum 3 Module — SM3, SM38RG5, SM3-ITG, SM3G 28 Pin Through-Hole

The SM3 Timing Module series are complete system clock modules for Stratum 3 timing applications and conforms to GR-1244-CORE, GR-253-CORE, G.812 (Type IV), G.8262 (Option 1 & 2) and G.813 (Option 1 & 2). Applications include shared port adapters, data digital cross connects, ADM's, DSLAM's, multiservice platforms, switches and routers in TDM, SDH and SONET environments.

The SM3 Timing Modules helps reduce the cost of your design by minimizing your development time and maximizing your control of the system clock with our simplified design.

These products are compliant with all required ROHS specifications.

- Four Auto Select Input References, 8 kHz - 77.76 MHz
- Frequency Qualification and Loss of Reference detection for each input
- Hitless Reference Switching
- Master/Slave Operation with Phase Adjustment
- Manual/Autonomous Operation
- Bi-Directional SPI Port Control
- Package: 1.45" x 1.0" x 0.25"



Sub-miniature surface mount Stratum 3 Module 34 Pin SM34 Series

The SM34 Timing Module is a complete system clock module for Stratum 3 timing applications and conforms to GR-1244-CORE, GR-253-CORE, G.812 (Type IV), G.8262 (Option 1 & 2) and G.813 (Option 1 & 2). Applications include shared port adapters, data digital cross connects, ADM's, DSLAM's, multiservice platforms, switches and routers in TDM, SDH and SONET environments.

The SM34 Timing Module guarantees full Stratum 3 compliance with a minimum of effort and cost in the smallest complete package available.

This product is ROHS-5 compliant. ROHS-5 indicates that this product is ROHS compliant except for lead from those manufacturers wishing to take the lead exemption.

- Eight Auto Select Input References, 8 kHz - 77.76 MHz
- Frequency Qualification and Loss of Reference detection for each input
- Hitless Reference Switching
- Master/Slave Operation with Phase Adjustment
- Manual/Autonomous Operation
- Package:1.025" x 1.015" x 0.350"

Miniature Stratum 3E Module 32 Pin DIP — SM3E Eight Reference Stratum 3

The SM3E Timing Module is a complete system clock module for Stratum 3E timing applications and conforms to GR-1244-CORE, GR-253-CORE, G.812 (Type III & V), and G.812 (Type VI). Applications include shared port adapters, data digital cross connects, ADM's, DSLAM's, multiservice platforms, switches and routers in TDM, SDH and SONET environments.

The SM3E Timing Module guarantees full Stratum 3E compliance with a minimum of effort and cost in the smallest complete package available.

- Eight Auto Select Input References, 8 kHz - 77.76 MHz
- Phase Buildout
- Hitless Reference Switching
- Better than 1ppb initial Holdover offset
- Frequency Qualification and Loss of Reference detection for each input
- Package: 2.05" x 1.25" x 0.75"

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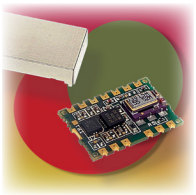
Timing Modules — Line Card Timing Solutions

Frequency Translators – Complete timing systems with little or no external components required.

Frequency Translators convert up to four selectable input frequencies from 8 kHz to 170 MHz on one input to one or more output frequencies up to 1 GHz (e.g. 25 MHz to 155.52 MHz or 19.44 MHz to 156.25 MHz). Input levels can be either CMOS or LVPECL. Output levels are CMOS or LVPECL depending on the model. Outputs are very low jitter (0.3 Ps RMS 12 kHz-20 MHz). Input frequency tracking ranges cover SONET to Ethernet requirements. Lock alarm indication is standard. Common applications for frequency translator modules include clock multiplication, clock jitter attenuation and regeneration, cross frequency domain translation and distribution of backplane/midplane distributed NE base rate clocks. All frequency translators are complete timing systems with little or no external components required.



SFX-424G Surface Mount Series — 20 x 14 x 6 mm

The SFX-424G is a high precision frequency translator that translates up to four inputs from 8 kHz to 100 MHz, to output frequencies between 19.44 MHz and 800 MHz. The SFX424G supports all major FEC rates.

The SFX-424G is well suited for use in line cards, service termination cards and similar functions to provide reliable reference, phase locked synchronization for TDM, PDH, SONET and SDH network equipment. The SFX-424G-M provides a jitter filtered, wander following output signal synchronized to a superior Stratum or peer input reference signal.

- 3.3V High Precision PLL
- Jitter Generation OC-192 Compliant
- Surface Mount, 20 x 14mm
- Accepts up to 4 Inputs from an External MUX
- Inputs Compatible with CMOS LVDS/ LVPECL
- Frequency Translation up to 800 MHz
- Alarm detection for Loss of Lock / Loss of Reference condition
- RoHS Compliant ✓RoHS

SCG102A Surface Mount Series — 25 x 20 x 7 mm

The Connor-Winfield SCG102 is a 3.3V frequency translator based on a high frequency, crystal oscillator that is input duty cycle tolerant. The SCG102 accepts one input which may be controlled to accept up to four unique reference frequencies between 8 kHz to 170 MHz.

The reference frequency selection is controlled by two input select pins.

The SCG102 locks to the input reference and provides a phase-locked output at customer specified frequencies ranging from 77.76 MHz to 170 MHz. The differential output is LVPECL.

- 3.3V High Precision PLL
- Tri-State Capability
- Input Reference Detector
- User Determined Input Reference
- 77.76 MHz to 170 MHz Output Frequencies
- SCG102AG RoHS Compliant ✓RoHS
- SCG102AG5 RoHS 5/6 Compliant

SFX200, 400G, 800 SFX-200 Surface Mount Series — 31 x 25 x 10 mm

The SFX-200 is a high precision frequency translator that translates one of two inputs, greater than 1 MHz, to one of two selectable output frequencies between 77.76 and 777.6 MHz. The SFX-200 supports all major FEC rates.

- Available as a 5.0V or 3.3V High Precision PLL
- Single TTL, CMOS, Comp LVPECL Input Reference, 2 Selectable Frequencies

- Two User Selectable PECL Output Frequencies
- Jitter Generation OC-192 Compliant
- 1.2” x 1.0” x 0.285” Surface Mount
- Available as RoHS Compliant ✓RoHS
- Compatible with Vectron FX-200

SFX-400G Surface Mount Series

The SFX-400G is a high precision frequency translator that translates one of two input frequencies, greater than 1 MHz, to one of four selectable output frequencies between 10 MHz and 945 MHz. The SFX-400 supports all major FEC rates.

- 3.3V High Precision PLL
- Single TTL, CMOS, Comp LVPECL Input Reference, 2 Selectable Frequencies

- Four User Selectable PECL Output Frequencies
- Jitter Generation OC-192 Compliant
- 1.2” x 1.0” x 0.285” Surface Mount
- Available as RoHS Compliant ✓RoHS

SFX-800 Surface Mount Series

The SFX-800G is a high precision frequency translator that translates one input, greater than 1 MHz, to one of eight selectable output frequencies between 10 MHz and 1 GHz. The SFX-800G supports all major FEC rates such as 15/14, 255/237, etc.

The SFX-800G provides a jitter filtered, wander following output signal synchronized to a superior Stratum or peer input reference signal.

The SFX-800G includes a lock detect (LD) alarm output and a loss of reference (LOR) alarm output. The LVPECL outputs may be disabled for external testing purposes by asserting a high signal to the Enable/Disable pin.

- Available as a 3.3V High Precision PLL
- Eight User Selectable PECL Output Frequencies
- Jitter Generation OC-192 Compliant
- 1.2” x 1.0” x 0.285”, Surface Mount
- ROHS Compliant ✓RoHS

Check on-line for the most up to date RoHS compliant products

RoHS COMPLIANT

Timing Modules — Line Card Timing

Synchronous Clock Generators - All are complete timing systems with little or no external components required

Connor-Winfield's HCMOS surface-mountable Synchronous Clock Generators are designed to be reference clock sources which lock to one or two backplane references from the Timing/Sync Cards. CMOS reference inputs are typically 8 kHz to 25 MHz and have single or multiple outputs with levels of CMOS, LVPECL or both. Output frequencies go as high as 670 MHz. Dual reference inputs are designed to switch hitlessly using select pins. Locked bandwidths range from 3 Hz to 74 Hz to achieve excellent jitter attenuation. A Loss-of-Lock alarm is available with manual or automatic 20 ppm Freerun operation. All Synchronous Clock Generators are complete timing systems with little or no external components required.

All SCG products are well suited for use in line cards, service termination cards and similar functions to provide reliable reference, phase locked synchronization for TDM, PHD, SONET, SDH and Synchronous Ethernet network equipment.

3.3V SCG2000 / SCG2000 / LVCMOS SCG2500 Series — 21 x 20 x 9 mm

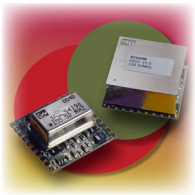
The Connor-Winfield SCG2000 Series provides high precision phase lock loop frequency translation for the telecommunication applications.

The SCG2000 Series provides a jitter filtered, wander following output signal synchronized to a superior Stratum or peer input reference signal.

The SCG2000iG provides high precision phase lock loop frequency translation for telecommunication applications that require a temp range of -40°C to 85°C.

The SCG2500 is a mixed-signal phase lock loop generating CMOS outputs from an intrinsically low jitter voltage controlled crystal oscillator. The SCG2500 can lock to one of two possible input reference frequencies at 8 kHz which is selectable using one input select pin.

- 3.3V High Precision PLL
- Tri-State Capability
- Active Alarms
- Guaranteed Free Run (20ppm for 19.44MHz output, 25ppm for 65.536MHz and 30ppm for 125.0 MHz)
- 1 Sec. Acquisition Time
- ROHS Compliant ✓RoHS
- One or two CMOS input references
- 20 ppm Freerun
- Frequency Ranges: 1.544, 19.44, 65.536, 77.76, 125 MHz
- Temperature Range: 0 to 70°C
- Commercial or Industrial Temp



3.3V LVPECL SCG4000/4500 Series 26 x 25 x 11.5 mm

The Connor-Winfield SCG4000/4500 Series provide high precision phase lock loop frequency translation for the telecommunication applications. SCG4000 and SCG4500 Series are well suited for use in line cards, service termination cards and similar functions to provide reliable reference, phase locked, synchronization for TDM, PDH, SONET and SDH network equipment. The SCG4000 Series provides a jitter filtered, wander following output signal sychronized to a superior Stratum or peer input reference signal

- 3.3V High Precision PLL
- Tri-State Capability
- Active Alarms
- Guaranteed Free Run ±20ppm
- 1 sec. Acquisition Time
- Intrinsically Low Jitter Crystal Oscillator
- Small Size: 1" Square
- Alarm Outputs for Loss-of-Lock (LOL)

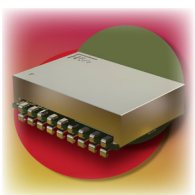
3.3V LVPECL SCG51/52 Series 34 x 25 x 11.5 mm

The SCG51 Series is a phase locked loop generating LVPECL outputs from an intrinsically low jitter voltage controlled crystal oscillator. The SCG52 Series is a dual input, phase locked loop. The LVPECL and CMOS outputs may be disabled.

The SCG51/52 have an acquisition time of about 1 second and it is tolerant of different reference duty cycles.

Further features include a combined LOL/LOR alarm output for Loss-of-Reference (LOR) and Loss-of-Lock (LOL). When both references are lost, the units will indicate an alarm and will automatically enter Free Run, which will guarantee a 20 ppm accurate output.

- 3.3V High Precision PLL
- Tri-State Capability
- Active Low Alarm
- Guaranteed Free Run ±20ppm
- 1 Second Acquisition Time
- 1 CMOS Output
- 3 LVPECL Outputs
- Available as RoHS Compliant ✓RoHS
- SCG52 - Automatic Free Run
- SCG52 - Dual Input References



3.3V LVCMOS SCG2230G Series 26 x 20 x 9 mm

The SCG2230G provides high precision phase lock loop frequency translation for the telecommunication applications.

The SCG2230G provides a jitter filtered, wander following output signal synchronized to a superior Stratum or peer input reference signal. This product is compliant with all required ROHS specifications.

- 3.3V High Precision PLL
- 1 Complimentary LVPECL Output
- 2 CMOS Outputs
- Selectable Output Frequencies
- Footprint Compatible with SCG2000 Series
- Active Alarms
- Guaranteed Free Run ±20ppm
- 1 Sec. Acquisition Time
- ROHS compliant ✓RoHS

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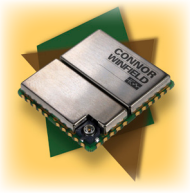
S O L U T I O N S

Series 125 Series Timing and Synchronization Solutions

GPS Disciplined Oscillators (GPSDOs)

GPS Disciplined Oscillators (GPSDOs) were created specifically for all precision timing and synchronization applications requiring higher end, cost sensitive solutions. By combining our uniquely designed GPS timing receivers with our high-quality oscillators, Connor-Winfield is able to offer a wide variety of superior, cost-effective GPS timing solutions. The 125 Series modules provide customer applications with the precise timing capabilities needed to optimize critical system performance.



Wi125 Modules

The Wi125 is a low cost small OEM surface mount GPS module that is specifically designed for use in synchronization and timing in WiMax applications.

The Wi125 includes an on-board, programmable NCO oscillator, which outputs a synthesized frequency up to 30 MHz, steered by a GPS receiver.

It also features a self-survey mode of operation, allowing the receiver to enter a position hold mode and continue accurate timing with only one satellite being tracked.

The output frequency is highly accurate, can achieve full PRC MTIE performance, and can trace satellites and provide GPS synchronization in weak signal areas such as indoor applications. This reduces the need for high antenna placement typical for many environments.

This module come in an exceptionally small surface mount package (25mm x 27mm x 4mm) with a highly integrated architecture requiring only the minimum external components allowing for easy integrations into host systems.

- 1PPS/ 10 MHz Phase alignment wire
- Stable Holdover
- Holdover Recovery
- 1 PPS & NCO Frequency Output
- GPS/UTC time/scale synchronization to 25 ns RMS
- Stable proven design with long term availability and multi-year support
- 12 channel hardware correlator processor design
- OEM SM footprint 25 x 27 mm
- Automatic entry into holdover
- Loss-of-lock and entry-into-holdover indication

FTS Series Modules — The FTS Series Frequency and Time Standard modules are GPS driven with a mixed-signal phase lock loop. The series provides a 1PPS CMOS output from a Connor-Winfield GPS timing receiver and generates a 10MHz CMOS and a 10MHz SINE output from an intrinsically low jitter voltage controlled crystal oscillator.

The FTS Series can lock to a 10MHz reference derived from the on-board GPS receiver or an external 10MHz reference or to an external 1PPS reference. Alarms are provided to indicate Loss-of-Lock, Holdover, and Antenna Fault. The on-board GPS receiver requires an outdoor mounted GPS antenna for the best stability and consistent performance.

The mode control inputs are used to manually switch between references and/or holdover. The user application should monitor the alarm outputs and manually switch modes as needed.

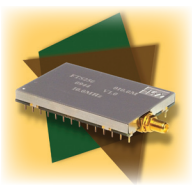
Serial I/O lines provide access to the NMEA messages from the GPS receiver (referenced in the Connor-Winfield's 125 User Manual. (Contact Connor-Winfield Sales for a copy).The serial I/O lines can be used to access GPS timestamp information, or to verify that the receiver has recovered from an alarm condition. The reset is used to reset the GPS receiver (if needed)

FTS125 Features

- Oscillator Selectable
- Phase locked 10.0 MHz output
- 1 PPS output
- 3 selectable references: GPS, External 10MHz or External 1PPS
- Holdover
- Three alarm outputs. (Loss-of-Lock, Hold over and Antenna Fault)
- Serial input and output ports (GPS receiver)
- Master reset
- +3.3 Volt power supply
- Commercial Temp (0-70° C)
- Meets ITU-T G.811 Wander Generation Mask
- Meets ETSI PRC Wander Generation Mask (w/OCXO reference)
- Physical Dimensions: 4.20" x 3.30" x 0.72" (106.68mm x 83.82mm x 18.29mm)
- Fixed Position Unit; Mobil positioning available. Contact Connor-Winfield for options

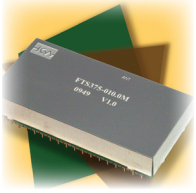
FTS250 Features

- TCXO Based
- Phase locked 10.0 MHz output
- 1 PPS output
- 3 selectable references: GPS, External 10MHz or External 1PPS
- Holdover
- Three alarm outputs. (Loss-of-Lock, Hold over and Antenna Fault)
- Serial input and output ports (GPS receiver)
- Master reset
- +3.3 Volt power supply
- Temperature Range: -40°C to 85°C
- Meets ITU-T G.811 Wander Generation Mask
- SMA Bulkhead GPS Antenna Connection
- Physical Dimensions: 2.8" x 1.725" x 0.368" (71mm x 43.82mm x 9.34mm)
- Fixed Position Unit; Mobil positioning available. Contact Connor-Winfield for options



FTS375 Features

- OCXO/TCXO Based
- Phase locked 10.0 MHz output
- 1 PPS output
- 3 selectable references: GPS, External 10MHz or External 1PPS
- Holdover
- Three alarm outputs. (Loss-of-Lock, Hol over and Antenna Fault)
- Serial input and output ports (GPS receiver)
- Master reset
- +3.3 Volt power supply
- Commercial Temp (0-70° C)
- Mechanical Dimensions: 3.937" x 1.969" x 0.708" (100mm x 50mm x 17.98mm)
- Fixed Position Unit; Mobil positioning available. Contact Connor-Winfield for options



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PRODUCT GUIDE

THE CONNOR-WINFIELD CORPORATION

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For specific product data, performance specifications, dimensions and ordering information, please refer to our website at **www.conwin.com**

The Connor-Winfield Corporation

2111 Comprehensive Drive
Aurora, Illinois 60505

Phone: 630-851-4722
Fax: 630-851-5040
Europe: +353-61-472221
www.conwin.com

ISO 9001:2000 Certification

Connor-Winfield has been ISO 9001 certified since 1995, and is currently certified under ISO's newest ISO 9001:2000 standard which ensures superior quality and repeatability in the manufacturing process.

We believe that quality begins well before our product is ever assembled. By maintaining our ISO 9001:2000 Quality System certification, continuous improvement to our processes is a commitment we make to constantly go beyond the expectations of our customers. For us, quality is not just a technique or system. It is an all encompassing and uncompromising philosophy to produce products that not only precisely meet our customers' quality requirements, but also surpass them in every way.

Headquarters, 2111 Comprehensive Dr, Aurora, IL

Manufacturing Facility, 2359 Diehl Rd, Aurora, IL

Our Partnership Philosophy

Connor-Winfield talks about partnerships, but how do we follow through?

From design to delivery, we are committed to providing the right product when you need it to get your product to market. But the process is circular. We also track emerging developments in our customers' markets to ensure that we have the tools and data required to support your next product development effort